
**METHOD AND APPARATUS FOR DYNAMICALLY ADJUSTING
OVERDRIVE PACING PARAMETERS**

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Abstract of the Disclosure

Dynamic overdrive pacing adjustment techniques are described for
10 use in implantable cardiac stimulation devices. In a first technique, an
overdrive pacing unit of a microcontroller of the implantable device
operates to optimize various control parameters that affect overdrive
pacing so as to achieve a desired degree of overdrive pacing for the
particular patient in which the stimulation device is implanted.

15 Parameters to be optimized include the number of overdrive beats paced
once overdrive pacing is triggered, the overdrive pacing response function,
the recovery rate, and various base rates. The control parameters are
adjusted in a hierarchical order of priority until the desired degree of
overdrive pacing is achieved. Adjustment of the number of overdrive
20 beats, the recovery rate, and various base rates is iteratively performed
by using incremental numerical adjustments. Adjustment of the overdrive
pacing response function may be performed by selecting among a set of
fixed predetermined linear response functions. In a second technique,
the overdrive pacing unit operates to optimize the shape of a single non-
25 linear dynamic overdrive pacing response function so as to achieve the
desired degree of overdrive pacing for the patient. The second technique
may either be employed alone or in combination with the first, hierarchical
optimization technique.